CALCULUS.

185. Proposed by A. H. HOLMES, Brunswick, Maine.

Required the perpendicular height of a right cone, radius of base being unity, such that the maximum ellipse that can be cut from the cone shall equal the base of the cone in area.

186. Proposed by Editor EPSTEEN.

Evaluate $\int_0^\infty \frac{\sin my}{y} dy, \quad \int_0^\infty \frac{\cos my}{y} dy.$

GROUP THEORY.

6. Proposed by L. E. DICKSON, Ph. D., The University of Chicago.

Show that the binary substitutions on ξ_1, η_1, the binary substitutions on ξ_2, η_2, and $(\xi_1\xi_2)(\eta_1\eta_2)$ generate a maximal subgroup of the quaternary abelian group.

MISCELLANEOUS.

146. Proposed by F. P. MATZ, Ph. D., Sc. D.

Given $\left.\begin{matrix} a\cos\alpha + b\sin\alpha = c \\ a\cos\beta + b\sin\beta = c \end{matrix}\right\}$ to prove that

$$\sin(\alpha+\beta) = \frac{2ab}{a^2+b^2}, \text{ and } \cot\alpha + \cot\beta = \frac{2ab}{c^2-a^2}.$$

NOTES.

Mr. H. R. Willard has been appointed instructor in Mathematics in the University of Maine.

Mr. C. A. Holden has been appointed assistant professor of Mathematics in Dartmouth College.

Dr. C. Gunderson has been appointed instructor in Mathematics in the Michigan Agricultural College.

Mr. C. H. Sisam has been appointed instructor in Mathematics at the U. S. Naval Academy, Annapolis.

Mr. W. D. Cairns has been promoted to an associate professorship in Mathematics at Oberlin College.

Prof. T. F. Nichols, of Hamilton College, has been promoted to a full professorship of Applied Mathematics.